

C O P Y

By W. P. Studdert

CB

Seattle

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Willis H. Rich,
~~Dr. C. H. Gilbert,~~
Bureau of Fisheries,
Washington, D. C.

Rich

My dear Doctor:

I changed over to the Merganser the same day we parted and left that evening for the head of Cold Bay. After reconnoitering rather thoroughly there for six days, went back to King Cove and lost a day making repairs to the boat.

Arriving at Morzhovoi Bay in a southeaster, we were compelled to lie at Little Johns Harbor until the weather moderated sufficiently to safely try taking the Merganser into Morzhovoi Lagoon.

I got up to the Lake on August 20th; salmon were ascending its outlet at a lively rate. My estimate as I walked along the bank was that nearly a thousand fish were passing up. The Pacific side of the Lake and a stretch of shore from the outlet to the deep slough toward Bering Sea were thickly covered by spawners. On subsequent trips to, and about, the Lake the increase in intensity of spawning operations was easily apparent. The heaviest spawning was done on the Pacific side, the same being true of last year; in my opinion the desirability and efficacy of a denser population of spawners on that shore is conjectural.

I was told that the Pioneer would sail for Seattle prior to October 1st, if the weather were unfavorable to continuing with her work. On the night of September 19th I took advantage of a good chance to run over to False Pass. I had noticed during the previous two days that the number of salmon in the outlet was dwindling and believe that the peak of the ascent to the Lake was then past. Rowing around the Lake in a skiff I ascertained, contrary to information we had been given, that 75% of its shore line is suitable for spawning purposes, in fact had spawners on it. I should judge the margin of the Lake to be twenty odd miles in length. Wet, gusty weather prevented my making a sketch with much measure of accuracy. You may be interested in knowing that at one point the Lake is no farther than 200 yards from the Bering Sea; scattered soundings toward that shore were of an average of one and two fathoms. The actions of salmon seen well out in the Lake made it seem probable that they were spawning.

It is my belief that when spawning is done, upwards of one hundred thousand salmon will have entered Morzhovoi Lake for that purpose. Thirty-six tags were recovered numbered as follows:

11595	12069	13029
11669	12089	13059
11771	12097	13134
11800	12165	13189
11814	12435	13200
11831	12807	13218
11848	12957	13245
11854		13246
11858		13439
11859		13496
11875		13501
11916		13527
		13601
		13852
		13836
		13869
		13978

I have arranged with an Eskimo boy who will be at Landsberg's Lagoon during this Fall and Winter to pick up and turn in any more tags that he may be able to find.

Thirty-five hundred, or more, salmon succeeded in getting into the small lake that lies at the head of Morzhovoi Lake and is difficult, or even impossible, of entrance when westerly weather operates to bank up gravel against its outlet, thereby spreading its flow over so much area as to lessen its depth to where salmon cannot swim. If that condition were remedied, the small lake offers spawning area to a great many more fish.

I found behind Landsberg's Lagoon, three lakes that Gardner did not show us and which are of respectable size and capable of producing considerable salmon. Their outlets are in such deplorable shape that whatever run may have at one time emanated in them has been overcome by natural impediments. If the streams tributary to that lagoon are made easier of ascent for salmon there can be no question but what that section would contribute to the run of Morzhovoi Bay in a more substantial manner than we had heretofore supposed possible.

The accompanying sketch will give you an idea of the situation as I found it at Cold Bay Lagoon:

Stream No. 1 and the lake at its head are small, the latter being of no importance, in my opinion, except as a contributing factor to the general run in the vicinity. At present it can be said that salmon are without any chance of entering it.

No. 2 is a narrow and shallow stream of an average width and depth of about 30 and 6 inches, respectively. It is the stream brought down to a channel by Messrs. Herrold and Rich, assisted by myself. At the

time the work was done, Mr. Herrold and I had just come down from the first lake at its head, where I saw twelve salmon, by actual count. No salmon were seen in the outlet as we followed and scrutinized its course part way to the beach.

Revisiting the stream a week later I saw in that small creek, which has a meandering course of one and a half miles to the lake, a number of salmon that I conservatively called three hundred.

In the first lake, which has the appearance of not being deeper than two fathoms, and a shore line of 2 miles, mostly gravel, there were several thousand salmon. Had we not happened along to facilitate, I may even say make possible, the ascent of these fish, it is a reasonable certainty that the escapement would have been next to nil.

On the south side of the first lake is another of four feet greater elevation; the narrow neck between the two lakes is approximately thirty feet across, and a small seepage comes through the bank into the first lake.

The third lake lies at the head of the first and has a shore line of gravel four miles around.

The lakes are connected, but I found the stream joining them obstructed and impassable for salmon. Some temporary work was done that enabled them to get through. Stream No. 2 and its lakes can be built up to where thousands of salmon may be annually spared from them.

Stream No. 3 enters the lagoon two miles beyond No. 2. The lake at its head has about one mile of shore line. A few red salmon were seen in it. The outlet has a winding course of a little more than a mile and carries a fair volume of water. Its mouth was blocked by gravel bars and windrows of eel grass in a manner precluding the passage of fish.

The beach channel of stream No. 4 was inadequate for salmon to pass up, excepting at high tide. It follows a devious course for two miles to a lake having a shore line of more than three miles, considerable stretches of which are gravel. Signs of red salmon were seen in the stream which is in a wretched condition at the lake; a bank of semi-liquid silt and decomposed vegetable matter lay lodged in a thick growth of reeds across the outlet. Salmon entering that thick mass floundered helpless about and apparently nearly all succumbed before they were able to force their way through to the clear water of the lake.

Stream No. 5 flows over a soft muddy beach from a small lake lying one half mile from the lagoon. No salmon were seen in the lake which is but half a mile in circumference. The character of its shore is for the most part unsuitable to spawning; local persons aver, however, that red salmon spawn in it.

Stream No. 6 emerges on the beach $3/4$ of a mile beyond No. 5, and has a channel at that point which salmon can swim up at half tide. In this case I went first to the source and did not follow back along the stream's course because of darkness coming on.

The larger and upper lake having an extent of shore line 3 miles in length, is an hours walk from the outlet on the beach toward the three jagged pinnacles on ones left hand from Pavlof Volcano. Red salmon were observed in the small basin formed just below the lake; the two are connected by a small stream that was obstructed so as to shut fish out of the lake. Some temporary work was done here. One half mile below the main lake is a small tributary to No. 6, which flows from a lake having approximately two miles of shore adaptable to spawning. The tributary is in such shape that a salmon's being able to pass up is questionable.

Stream No. 7, a few moments walk beyond No. 6 has a low water width of 30 or 40 feet and sufficient depth to float a salmon boat. A short way from the mouth it narrows to ten feet and holds that width evenly to the lake, a walk of an hour and a half from the beach.

Salmon were ascending the stream and good numbers of them were spawning in the lake, a mile round with a gravel shore. A stream empties into the lake from the direction of the lakes lying back of the northeast end of Cold Bay proper. I concluded we might investigate its source more advantageously while examining Stream No. 8. In attempting to get to the last mentioned stream, we were prevented from landing by an increasing on-shore wind. Information elicited from persons acquainted with the locality indicates that it has a run of reds and a lake at its head of considerable size.

The lake at the head of Mortenson's Lagoon has a stretch of shore eight or ten miles long, and is valuable spawning area. My conclusion is that the place has been under the handicap of destructive methods of fishing.

Dimentrie's Lagoon could not be thoroughly investigated at the time I was on the ground, owing to an impending storm. Questioning those having knowledge of the place, I gained the impression that a small run of reds enter the lagoon and spawn in a branch stream under conditions similar to those found at Svenson's Lagoon on Unimak Island.

The potentiality of the spawning area adjacent to Cold Bay can be but vaguely presented to anyone in writing. To fully appreciate the neglected condition of that section, and what may be done toward augmenting its run, one must view it for himself. Various reasons restrict a conservative person in his statements as to where, and how, a run may be built up; but if facilitating the ascent of fish cut off from spawning grounds to lakes that seemingly should be producers of salmon will add, then there can be no doubt but that a fishery of good proportions can be developed in Cold Bay, which has an available straight, lake shore line spawning area, aggregating approximately thirty miles. In selecting a person to direct the work of opening up these spawning grounds, the Bureau must exercise the discretion of demanding in him a sympathetic interest in, and appreciation of the worth of the work, and adequate energy to force it through, as it will prove with the lugging of implements and equipment across swamps and back to the lakes, under every kind of weather condition, the most fatiguing of labor.

I visited Izemback Bay while examining Svenson's Lagoon in August, and found the former place to be an enormous mud flat over which only a power dory can run on the very top of highwater. There were no fish in the bay.

fished by
"Red Nishem"

Paul Hansen's Lake, which has its outlet in Izemback Bay, I had previously visited from the Pacific side and found it to be three or four miles long, by one mile wide. I saw about twenty red salmon in it. Those who have spent some time in its vicinity state that the Bering Sea high tides back into it.

Two small lakes lie behind Strawberry Point but had no salmon to speak of in them. Another lake visited by Messrs. Herrold and Rich and myself is situated between Strawberry Point and Round Island. It is a small lake, but I saw more salmon in it than in any of the lakes that have their outlets in Izemback.

Jim Harris' Lake, the source of a small stream coming into Applegate's Cove, has a shore line of about one and a half miles; its water is of a brownish color and ill smelling. I saw but two red salmon in it.

The above lakes were the only ones that I could positively determine as having outlets that empty into Izemback Bay.

After three visits to Svenson's Lagoon I am convinced that more salmon have spawned there this season than I saw last year.

Spawning was going on in the lagoon, which was brackish, but wherever I could examine the shore I found fresh water seeping up from beneath.

The spawning in the stream commences a mile or more above the mouth and continues over the stream's course for two and a half or three miles. I could find no lake of any consequence having an outlet emptying into the lagoon with the exception of a small one just above the mouth of the main stream, that I estimated to be 300 yards across, and which the Coast Survey men put at two thirds of that distance. In comparing notes with those who made the survey I was pleased to see how closely their work compared with my description of last year, which was said by some to be poorly done and adverse to their interests.

Yours very truly,

(signed) Bill.